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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,541	10/21/2003	Yasushi Fujimoto	061069-0306016	9317
909 7590 07/19/2007 PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102			EXAMINER BUI PHO, PASCAL M	
			ART UNIT 2878	PAPER NUMBER
			MAIL DATE 07/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/689,541

Applicant(s)

FUJIMOTO ET AL.

Examiner

Pascal M. Bui-Pho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/832,800.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is responsive to communications filed on 27 April 2007. Presently, claims 1 and 3-15 remain pending.

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/832,800, filed on 12 April 2001.

Claim Objections

2. Claim 11 is objected to because of the following informalities: on line 7, "a sample" should be changed to --the sample--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 3-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz (US 6,248,988).

With regards to claim 1, Krantz discloses in Figs. 1, 5, and 6 a focus-detecting device for a microscope, comprising: a light source (11); a partially light-introducing member having an aperture (20) for intercepting a section of a light beam from the light source so that only part

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of the light beam from the light source enters the microscope; a multi-beam producing member (19) disposed in a path of light from the light source to a photodetector (49, 125, 141) and producing a plurality of multi-spot light beams (33, 137, 139), the plurality of multi-spot light beams irradiating a sample surface (35) of the microscope; a light-condensing optical system (47, 123) that condenses the plurality of multi-spot light beams reflected from the sample surface of the microscope; the photodetector being configured to output signals based on positions of spots (143) that correspond to the reflected multi-spot light beams incident thereon, the photodetector disposed on an exit side of the light-condensing optical system specifically at a light convergence position of the light-condensing optical system (generally depicted in Fig. 6) and having at least two light-receiving sections (Column 9, line 58 – Column 10, lines 53); and a focusing-state calculator (140, Fig. 9) that calculates a focusing state of the microscope based on output signals from the photodetector. Krantz however lacks a clear disclosure of said aperture intercepting a semicircular section of a light beam from the light source. The aperture would have been assigned a semicircular section, however, if not, utilizing a specific aperture element for passing a particular portion of the beam would have been known to one of ordinary skill in the art. Accordingly, at the time of the invention, it would have been obvious to modify Krantz by including an aperture intercepting a semicircular section of a light beam from the light source in order to gain greater control of the entering light beam.

With regards to claims 3-5, Krantz discloses a focus detecting device for a microscope comprising, among other features, a multi-beam producing member (19), but lacks an inclusion of a first crystal plate for the multi-beam producing member and wherein a second crystal plate is disposed on an exit side of a quarter-wave plate. Selecting a particular optics element for

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performing similar optical functions would have been obvious to one of ordinary skill in the art. Accordingly, at the time of the invention, it would have been obvious to modify Krantz by including a first crystal plate for the multi-beam producing member and a second crystal plate disposed on an exit side of a quarter-wave plate, in order to provide a desired selection of the optics component for the microscope. The further recitations of claim 4 would have also been obvious for similar reasons set forth above.

With regards to claims 6 and 9, Krantz discloses a focus detecting device for a microscope, but fails to further disclose a diffuser disposed on an exit side of the light source (11), to diffuse rays from the light source. Selecting a known available optic to provide a desired distribution of light in an optical system would have been obvious to one of ordinary skill in the optics art. Accordingly, at the time of the invention, it would have been obvious to modify Krantz by including a diffuser as claimed in order to widen the angle of the modulated light beam.

With regards to claims 7 and 10, Krantz discloses a focus-detecting device for a microscope, but fails to specify whether or not the light source is constructed as a surface-illuminant laser diode having a plurality of radiant points so that arrangement of the multi-beam producing member is dispensable. Selecting a specific or particular structure and/or type of a light source in order to provide a long lasting life of the light source would have been obvious to one of ordinary skill in the art. Accordingly, at the time of the invention, it would have been obvious to modify Krantz by including a light source constructed as a surface-illuminant laser diode having a plurality of radiant points in order to provide easier maintenance performance for

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the microscope. The further inclusion of a specific partially light introducing member as claimed in claim 10 would have also been obvious for similar reasons set forth above.

With regards to claim 8, Krantz discloses a focus-detecting device for a microscope, but lacks an inclusion of at least one diffraction grating and a crystal plate as the multi-beam producing member. Selecting particular optical elements for performing similar optical functions would have been obvious to one of ordinary skill in the art. Accordingly, at the time of the invention, it would have been obvious to modify Krantz by utilizing a diffraction and a crystal plate as the multi-beam producing member in order to provide greater control of the light beam entering the microscope.

With regards to claim 11, Krantz discloses in Figs. 1, 5, and 6 a focus detecting device for a microscope, comprising: a beam-splitting member (25) having a surface from which or through which an incident light beam (21) is reflected or transmitted and is disposed at an intersection of an optical axis of a first path of light (path going to sample surface) and an optical axis of a second path of light (path reflected from sample surface); a light source (11) disposed in the first path of light; a multi-beam producing member (19) disposed between the light source and a sample (35), to produce a plurality of multi-spot light beams (33, 137, 139) to irradiate the sample; a light-condensing optical system (47, 123) disposed in the second path of light on an exit side of the beam-splitting member, to condense the plurality of reflected multi-spot light beams (143) passing the beam-splitting member; a photodetector (49, 125, 141) being configured to output signals based on positions of spots that correspond to the reflected multi-spot light beams incident thereon, the photodetector disposed on an exit side of the light-condensing optical system specifically in the second path of light at a light convergence position of the light-

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condensing optical system and provided with at least two light-receiving sections (Column 9, line 58 – Column 10, lines 53); a light-intercepting member disposed between the light source and the photodetector and having an aperture (20) for intercepting a section of a light beam passing there; and a focusing-state calculator (140; Fig. 9) that calculates a focusing state of the microscope based on output signals from the photodetector. Krantz however lacks a clear disclosure of said aperture intercepting a semicircular section of a light beam from the light source. The aperture would have been assigned a semicircular section, however, if not, utilizing a specific aperture element for passing a particular portion of the beam would have been known to one of ordinary skill in the art. Accordingly, at the time of the invention, it would have been obvious to modify Krantz by including an aperture intercepting a semicircular section of a light beam from the light source in order to gain greater control of the entering light beam.

With regards to claims 12 and 13, Krantz discloses a focus detecting device for a microscope comprising, among other features, a light-intercepting member comprising an aperture (20); a beam-splitting member (25, 121); a light-condensing optical system (47, 123); a beam-splitting member (19); and an objective lens (29, 117). Krantz however lacks a clear disclosure of said light-intercepting member being disposed between the beam-splitting member and the light-condensing optical system; and wherein the multi-producing member is disposed between the beam-splitting member and an objective lens of the microscope. Selecting a desired optical arrangement for performing similar optical functions would have been obvious to one of ordinary skill in the art. Accordingly, at the time of the invention, it would have been obvious to modify Krantz by selecting the claimed optical arrangement in order to provide optimal sensing results.

With regards to claims 14 and 15, Krantz discloses a focus detecting device for a microscope wherein the light-condensing optical system (47, 123) comprises a lens element that condenses the plurality of multi-spot light beams in such a manner that each of the plurality of spots on the photodetector (49, 125, 141) has a shorter diameter in a direction in which the spots are aligned (vertical) than a diameter in a direction perpendicular to the direction in which the spots are aligned (horizontal), as claimed (generally depicted in Fig. 5).

Response to Arguments

5. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

It is herein noted that Page 6, second paragraph, of the submitted Remarks does not properly reflect that status of the claims. By virtue of the amendment filed 27 April 2007, claim 2 has been cancelled. Accordingly, as noted above, claims 1 and 3-15 remain pending.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Telephone/Fax Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pascal M. Bui-Pho whose telephone number is (571) 272-2714.

The examiner can normally be reached on Monday through Friday: 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Pascal M. Bui-Pho
Examiner
Art Unit 2878


**QUE TAN LE
PRIMARY EXAMINER**